Lyte-MV
User Guide

1. INTRODUCTION

Thank you for purchasing the Lyte-MV laser. This emits a red / infra-red uniform line. You will have one of the following two versions:

• CW + Linear intensity / modulation control version
• CW + TTL modulation control version

If you have any problems or require help when using the Lyte-MV please call us on +44 (0)1495 212213 or contact your local representative.

2. PRODUCT OPERATION

2A. CW + LINEAR MODULATION / CONTROL VERSION

Connect Binder connector (see diagram A) to back of laser

- CW Mode

To operate laser in CW mode the Red, Black and Blue leads should be connected to the following:

1. Red lead: +5 Vdc (± 10%)
2. Black lead: 0 Vdc
3. Yellow lead: Not connected
4. Blue Lead: V supply if not using as enable switch (enable switch)

- Linear Modulation function

To linearly modulate the laser any modulation signal up to 200 kHz (dependant on diode) with an amplitude of 0V to +1Vdc can be applied to yellow lead.

1. Red lead: +5 Vdc (± 10%)
2. Black lead: 0 Vdc
3. Yellow lead: input modulation signal 0 to +1 Vdc
4. Blue Lead: V supply if not using as enable switch (enable switch)

- Linear intensity control

Alternatively the yellow lead can be used for a linear power control function. In this situation, the laser power is determined by a voltage applied to the yellow lead, 0V turning the laser off and +1 Vdc giving maximum power, with linear trend between. (See linear intensity graph)

1. Red lead: +5 Vdc (± 10%)
2. Black lead: 0 Vdc
3. Yellow lead: input control voltage (0 V to +1 Vdc)
4. Blue Lead: V supply if not using as enable switch (enable switch)

Global Laser

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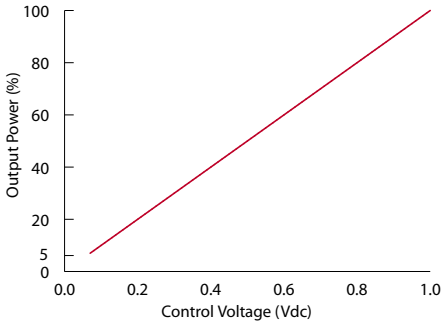
- Enable Switch

An on/off switch function is available via the blue wire. Applying 0V will switch the laser off whilst applying V supply leaves the laser on. A TTL switch can be utilised via this lead. If not using this function please connect the lead to the Vsupply.



Linear intensity graph

Setting the power via a resistor

The control wire has a 10k Ohm input impedance connected to an internal 1V source which is used as the reference for the factory set power. Measuring the voltage between the Yellow and Black wires with a high (>10M Ohm) impedance voltmeter, will give a reading of 1 V ± 2%. Connecting a 10k Ohm resistance between the Yellow and Black wires will result in the reading falling to 0.5V and the light output falling to half the factory set power.

Other outputs between 0 and the factory set power can be achieved with a single resistor Rx by using the formula:

$$Rx = \frac{Po*10k}{Pfs-Po}$$

where Po is the required power output as Pfs is the factory set power

2B. CW+ TTL CONTROL (TTL CONTROL VERSION)

Connect Binder connector (see diagram A) to back of laser.

- CW MODE

To operate laser in CW mode the Red, Black, yellow and blue leads should be connected to the following:

1. Red lead: +5 Vdc (+/- 10%)
2. Black lead: 0 Vdc
3. Yellow Lead: +V supply
4. Blue Lead: V supply if not using as enable switch (enable switch)

- TTL MODE

With this version the yellow wire can be utilised to modulate the laser with a digital TTL input signal. Two variants are available either digital non-inverting (DNI) TTL or digital inverting (DI) TTL. The DNI version produces maximum power with a positive TTL signal and zero power with zero TTL level. Vise-versa for the DI version.

1. Red lead: + 5 Vdc (+/- 10%)
2. Black lead: 0 Vdc
3. Yellow lead: Input TTL signal
4. Blue Lead: V supply if not using as enable switch (enable switch)

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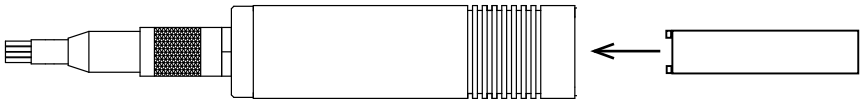
3. FOCUS ADJUSTMENT

The laser will be tested and shipped to the nominal working distance requested at time of order. Should you need to adjust the focus please follow the simple instructions below:

1. Slacken the four 2mm grub screws, which secure the prism lens assembly using the allen key supplied. (see diagram C)
2. Remove the prism lens assembly. (see diagram E)
3. Set up laser at required working distance. Adjust the inner lens assembly by rotating it with the supplied focus tool (see diagram D) to project the smallest spot at the required working distance.
4. Re-fit the line optics and align the ridge of the line lens to the major axis of the laser beam. Make minor adjustments to achieve an optimum line quality.
5. Tighten grub screws to lock prism lens assembly in place.



4. OPERATING WITH 11/32 VDC ADAPTOR AND 110/240VAC ADAPTOR

Please note: these adaptors only operate the laser in CW mode.

• +11 Vdc to +32 Vdc adaptor

1. Remove special power adaptor cable from box
2. Plug DC jack into power supply and screw binder connector into end of laser
3. To the flying leads on the power adaptor connect as follows:

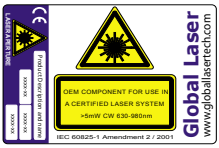
   Red: +11 Vdc to +32 Vdc
   Black: 0 Vdc
   Yellow: Chassis Earth

• 110/240 Vac PS-1 mains adaptor

1. Remove special power adaptor cable from box
2. Plug DC jack into PS-1 power supply and screw binder connector into end of laser
3. Connect IEC mains plug to PS-1 power adaptor

5. SAFETY AND CLASSIFICATION

These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1 Amendment 2/2001, which should be consulted prior to designing or using any laser product. The following labels are supplied for attachment to the customer's equipment, but responsibility for compliance with the standard remains with the user.


OEM COMPONENT FOR USE IN A CERTIFIED LASER SYSTEM
<5mW CW 630-980nm
IEC 60825-1 Amendment 2 / 2001
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OEM Laser Label

Class 2M Laser Label

Class 3R Laser Label

IEC 60825 Warning Labels

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6. CLEANING THE OPTICS

If the laser pattern becomes fuzzy or unclear, please check the following:

1. Check the laser is in focus (see section 3)
2. Verify the optical lens is clean, if the area has been contaminate please remove dirt with dry air.

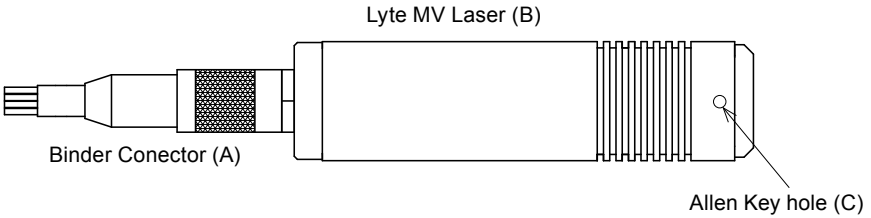
7. MOUNTING

It is recommended to ensure longer life and stability of the laser, the product is mounted in a suitable heatsink. Global Laser also offer a high quality industrial mount (as pictured diagram F) that firmly clamps the laser and prevents movement against shock and vibration.

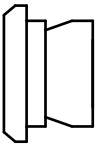
8. PRODUCT WARRANTY AND REPAIR

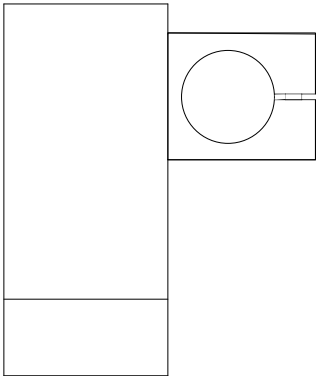
If your product develops a fault within 12 months from the date of purchase Global Laser will repair / replace the product. If you wish to return a faulty product contact your local representative or Global Laser to obtain a RMA (Return Material Authorisation code) and return to the address below.

9. DIAGRAMS



Focus Key (D)


Line Optics lens assembly (E)


Heavy Duty Mount (F)